

AMENDMENTS TO THE CLAIMS

Please cancel claims 1 through 12, please amend claims 16 and 19, and please add new claims 20-31, such that the status of the claims is as follows:

1.-12. (Canceled)

13. (Original) A material removal device for lapping a bar comprising a plurality of sliders, the material removal device comprising:

means for sensing a height of each magnetoresistive element on each slider on the bar;

means for controlling the material removal device based on the sensed magnetoresistive element height of each slider to achieve a target height for each magnetoresistive element on each slider on the bar.

14. (Original) The material removal device of claim 13 wherein the means for controlling the material removal device comprises a control system for collecting data corresponding to the sensed magnetoresistive element height and comparing the data to a target height.

15. (Original) The lapping device of claim 14 wherein the means for controlling the lapping device further comprises individual slider based control drivers for individually adjusting each slider relative to the lapping device.

16. (Currently Amended) The lapping device of claim 13 wherein [the means for] sensing the height of the magnetoresistive element comprises:

applying a magnetic field to the bar;

applying a bias current to each magnetoresistive element on each slider on the bar;

and

sensing an electrical response of each of the magnetoresistive elements to the magnetic field.

17. (Original) The lapping device of claim 16 wherein sensing an electrical response of the magnetoresistive element comprises sensing a change in resistance.

18. (Original) The lapping device of claim 16 wherein sensing an electrical response of the magnetoresistive element comprises sensing an amplitude.

A¹ 19. (Currently Amended) The lapping device of claim 14 wherein the means for sensing the height of the magnetoresistive element comprises:

[providing] a dummy magnetoresistive element on each slider to protect the working magnetoresistive element on each slider from electro-static discharge; and means for sensing an electrical response of the dummy [reader] magnetoresistive element.

20. (New) A material removal device for lapping a plurality of sliders, the material removal device comprising:

a fixture for holding the plurality of sliders;

a lapping mechanism for lapping a surface of the sliders;

a plurality of control drivers, wherein each slider has an associated control driver for individually adjusting each slider relative to the lapping mechanism; and

a control system for controlling lapping of the sliders by controlling the plurality of control drivers.

21. (New) The material removal device of claim 20 and further comprising a sensor associated with each slider configured to sense a parameter related to a height of a magnetoresistive element on each slider.

22. (New) The material removal device of claim 21 wherein the sensor comprises a magnetoresistive element of the slider.

23. (New) The material removal device of claim 21 wherein the plurality of sliders comprises a bar of sliders.

24. (New) The material removal device of claim 23 wherein the control system controls lapping of the bar based on a height profile of the bar obtained from the sensors.

25. (New) The material removal device of claim 20 and further comprising a dummy magnetoresistive element on each slider.

26. (New) The material removal device of claim 25 wherein the dummy magnetoresistive element on each slider is configured to sense a parameter related to a height of a magnetoresistive element on each slider, and wherein the control system controls lapping of the sliders based on the sensed parameter.

27. (New) A material removal device for lapping a plurality of sliders, the material removal device comprising:

a lapping mechanism for lapping a surface of the sliders; and

a mechanism for individually removing each slider from the lapping mechanism
when a target dimension for that slider is attained.

28. The material removal device of claim 27 and further comprising a sensor associated with each slider configured to sense a parameter related to the target dimension.

29. The material removal device of claim 28 wherein the mechanism for individually removing each slider from the lapping mechanism comprises:

a plurality of control drivers associated with each slider; and

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a control system for controlling the control drivers during lapping based on the sensed parameter and the target dimension.

30. The material removal device of claim 28 wherein the sensor comprises a magnetoresistive element of the slider.

31. The material removal device of claim 28 wherein the sensor comprises a dummy magnetoresistive element associated with the slider.

